FORM PTO-1472
(Rev. 4-2002)

U.S. DEPARTMENT OF COMMERCE

PATENT AND TRADEMARK OFFICE

EXAMINER'S CASE ACTION WORKSHEET

Application No. 09/967,315		Legal Instrument Examiner

CHECK TYPE OF ACTION

DATE OF COUNT

☒ Non-Final Rejection	☐ Restriction/Election Only	☐ Final Rejection
☐ Ex Parte Quayle	☐ Allowance	☐ Advisory Action
☐ Examiner's Answer	☐ Reply Brief Noted	☐ Non-Entry of Reply Brief
☐ Defective Notice of Appeal	☐ Interference Disposal SPE _____ (Approval for Disposal)	☐ Suspension (Examiner-Initiated) SPE _____ *(initial)*
☐ Defective Appeal Brief	☐ SIR Disposal (use only after FAOM)	☐ Supplemental Examiner's Amendment
☐ Miscellaneous Office Letter (With Shortened Statutory Period Set)	☐ Notice of Non-Responsive Amendment (With One Month Time Period set)	☐ Miscellaneous Office Letter (No Response Period Set)
☐ Abandonment after BPAI Decision	☐ Supplemental Action (excluding Examiner's Answer)	☐ Response to Rule 312 Amendment
☐ Letter Restarting Period for Response (e.g., Missing References)	☐ Interview Summary	☐ Authorization to Change Previous Office Action SPE: _____ *(Initial)*
☐ Abandonment	☐ Express Abandonment Date: _____	☐ Other Specify: _____

Examiner's Name: Sarah Song **AU:** 2874

Office Action Summary	Application No.	Applicant(s)	
	09/967,315	HELLMAN ET AL.	
	Examiner	Art Unit	
	Sarah Song	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-44* is/are allowed.

6)☒ Claim(s) *45,47 and 50-54* is/are rejected.

7)☒ Claim(s) *46,48,49 and 55* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Information Disclosure Statement

1. The prior art documents submitted by the applicant in the Information Disclosure Statement filed on January 28, 2002 have all been considered and made of record (note the attached copy of form PTO-1449). However, a publication date has not been sufficiently provided for the prior art documents "8 pages from www.ma.man.ac.uk/~hewitt/experiments/html" and "5 pages From Fluent Incorporated Website ("Flow Past a Circular Cylinder")". The retrieval date of the above documents is shown on the documents as "5/23/200"; the year is incomplete. Applicant is requested to provide the prior art date for the above noted documents. See MPEP 707.05(e) for examples of citations of electronic documents.

Drawings

2. This application has been filed with twenty-one (21) sheets of drawings, which have been approved by the Examiner.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. For example, on page 11, last line, Examiner believes that "500 mm" should be –500 μm–.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 45, 47 and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Chang (U.S. Patent 6,014,244). Chang discloses a multi-channel birefringent optical package comprising an input ferrule 38 having a first capillary extending axially through said ferrule and satisfying a predetermined tolerance for the dimensions (inherent); at least two input optical fibers 26 extending through said input ferrule 38; an output ferrule 48 having a second capillary; at least four output optical fibers 28; and a birefringent block 50 and 58 positioned between said input and output ferrules such that light signals input via said input fibers are processed by said block and directed to said output fibers. It is noted that the birefringent blocks are combiner-splitters.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 45, 47 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer (U.S. Patent 6,433,924). Sommer discloses a multi-channel optical package comprising an input ferrule 112 having a first capillary extending axially through said ferrule and satisfying a predetermined tolerance for the dimensions (inherent); at least two input optical fibers 110, 114, 116, 121 extending through said input ferrule 112; an output ferrule 120 having a second capillary; at least four output optical fibers 118, 122, 124, 126; and an isolator 128 positioned

between said input and output ferrules such that light signals input via said input fibers are processed by said isolator and directed to said output fibers. Sommer does not specifically disclose a birefringent block. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the optical package to comprise a birefringent block since it was known in the art that isolators commonly comprise birefringent blocks. It is noted that the birefringent blocks are combiner-splitters.

8. Claims 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommer as applied to claim 50 above, and further in view of the 8 pages from www.ma.man.ac.uk/~hewitt/experiments/html (hereinafter Hewitt) provided by the Applicant. Chang does not specifically disclose the tolerance for the position of the optical fibers. Hewitt discloses a four-fiber ferrule of similar configuration to that of Sommer. The ferrule of Hewitt provides a tolerance of 0.5 μm for the fiber separation and observed magnitude of fiber displacement limited to 0.7 – 1 μm. Since the tolerance disclosed by Hewitt overlaps the tolerance claimed, the claimed tolerance would thus be obvious in view of Hewitt. One of ordinary skill in the art would have found it obvious to provide the ferrule of Hewitt in the optical package of Sommer for the purpose of precisely positioning the fibers, which results in minimized insertion losses.

Allowable Subject Matter

9. Claims 1-44 are allowed.

10. Claims 46, 48, 49 and 55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose an optical package comprising a first ferrule having a first capillary, two single mode fibers extending through said first capillary, a second ferrule having a second capillary, at least four PM fibers positioned inside the second capillary and coupled to the single mode fibers, or a method of providing the same. The prior art of record also does not disclose the optical package of claim 45 or 50 comprising PM fibers, and does not suggest or render obvious a modification to Sommer or Chang to comprise the PM fibers.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Xu et al., Takahashi et al., and Bao et al. disclose various optical packages comprising four-fiber ferrules. Huang et al. discloses a conventional 3-port polarization combiner/splitter.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Any inquiry concerning the merits of this communication should be directed to Examiner Sarah Song at telephone number 703-306-5799. Any inquiry of a general or clerical nature, or relating to the status of this application or proceeding should be directed to the receptionist at

telephone number 703-308-0956 or to the technical support staff supervisor at telephone number 703-308-3072.

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July 21, 2003

John D. Lee
Primary Examiner